Raster Function Processing

Eric Rice

Raster Functions
ArcGIS Imagery Information Model

- **The Raster Function is the primary information model component which processes raster data.**

- **It's role is to take input pixels and transform output pixels into meaningful products**

Raster Functions
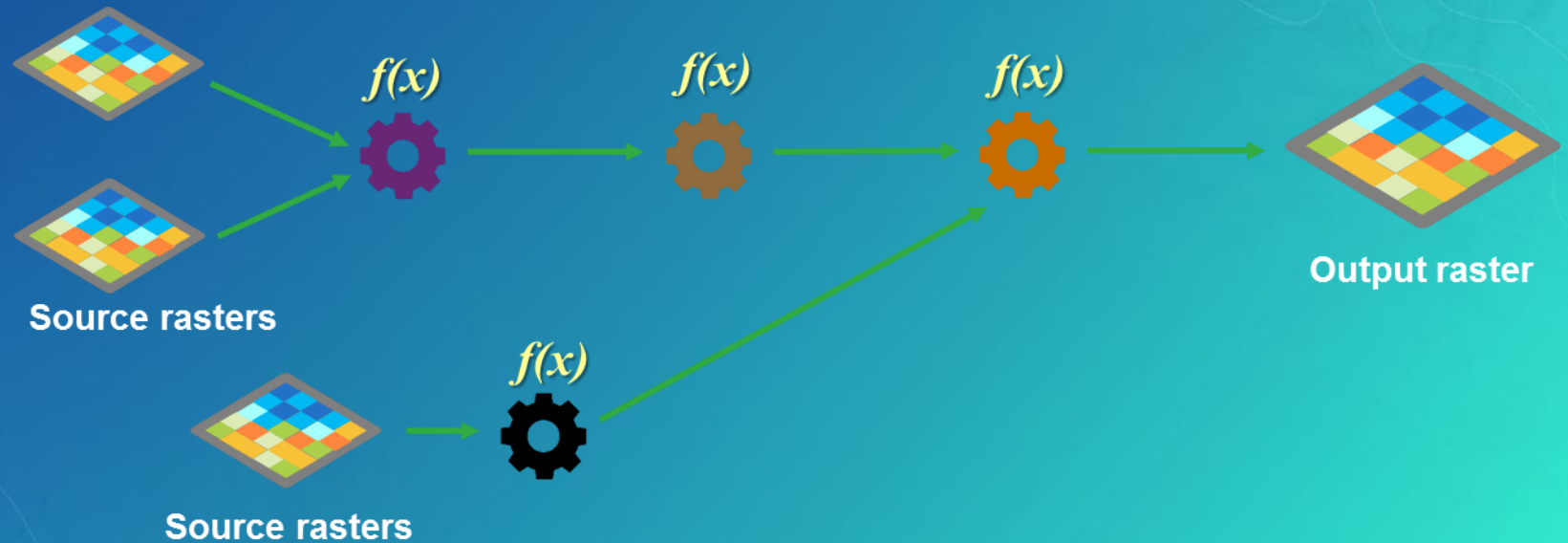## ArcGIS Imagery Information Model

- **Raster Functions are chained together to create simple or advanced processing chains**
  - pixels that flow through the chain are virtual in nature ("on-the-fly" processing)

- **100+ Raster Functions**

- **Extensible : https://github.com/Esri/raster-functions**

  - **Build your own using Python**

Source rasters
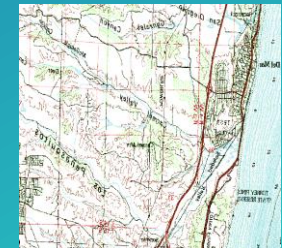
Source rasters

Output raster

Raster Functions
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What are the advantages of using Raster Functions?

- Save space
  - No intermediary data
  - No redundant data
    - Source pixels are referenced

- Save time
  - Immediate results
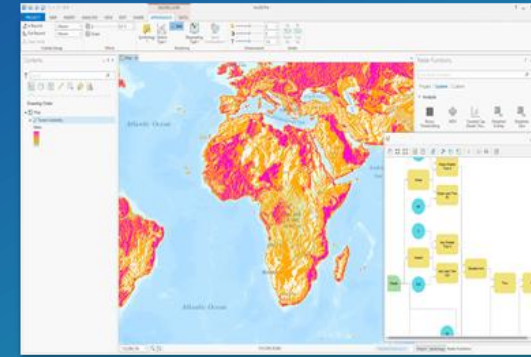   - No data written to disk
  - Easy to use

Raster Functions
ArcGIS Imagery Information Model
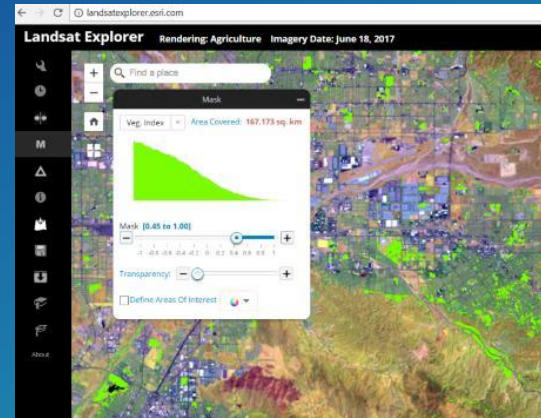
Where can I use Raster Functions?

Client side on-the-fly processing
- ArcGIS Pro
- ArcMap

Server Side on-the-fly processing
- Image Services
- Websites

Server Side Distributed Raster Analytics
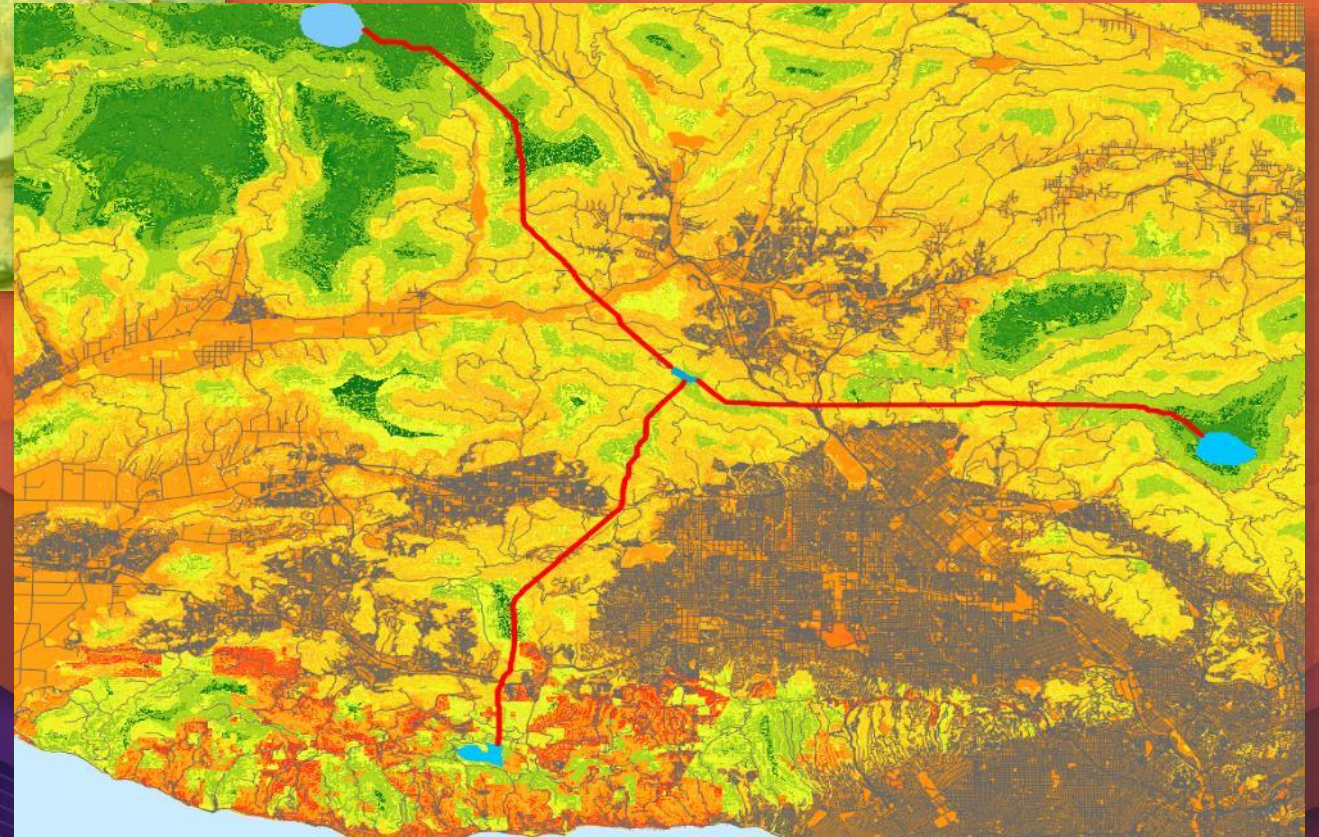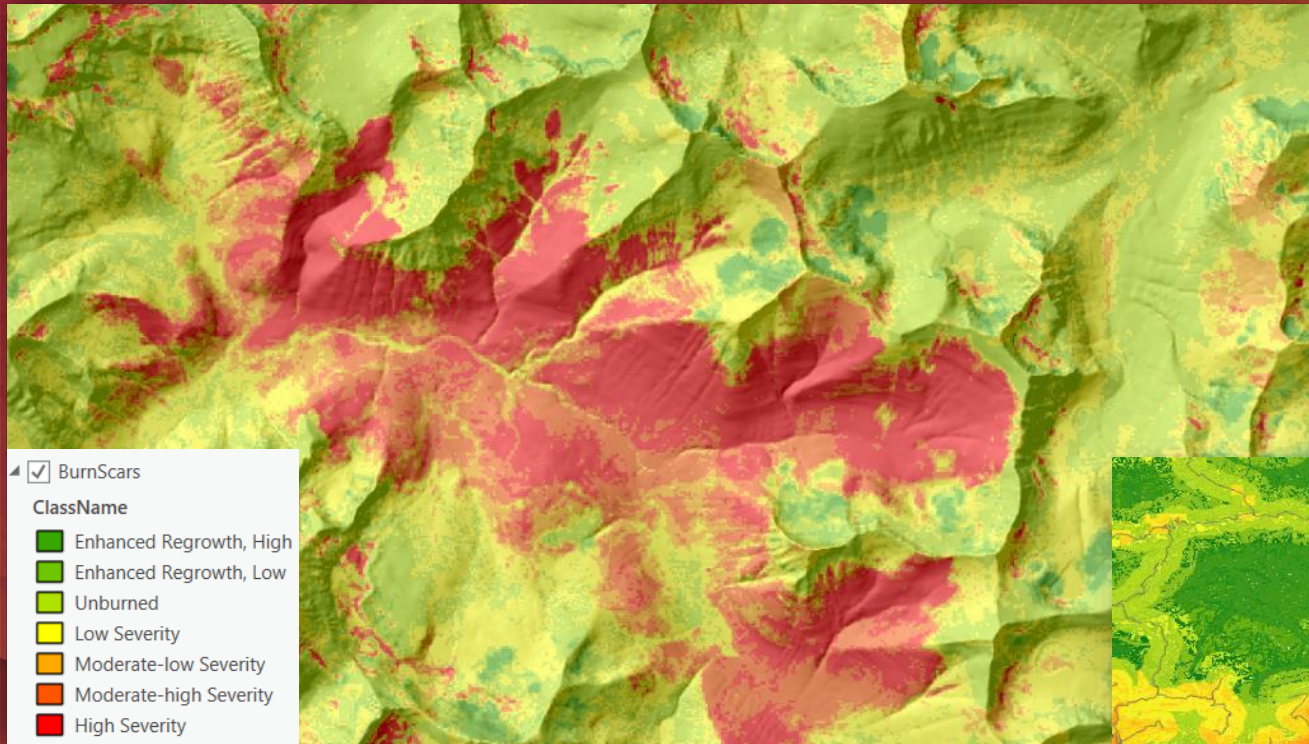- Scales to support massive volumes of data
- Persisted analytical results hosted on your portal and served as an Image Service

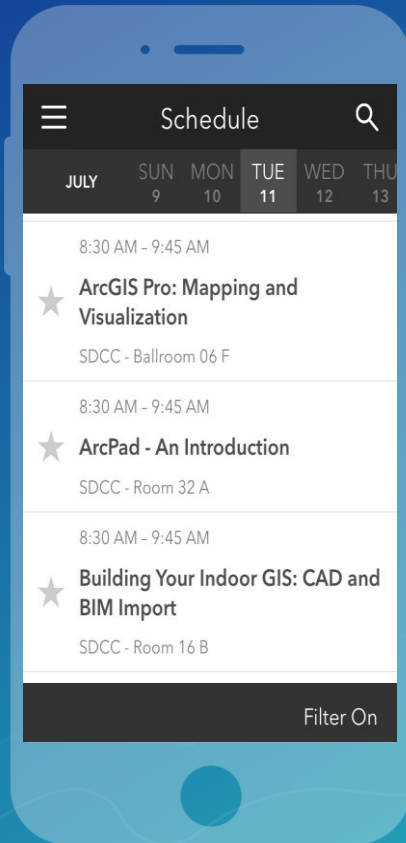**Server-based Distributed Raster Analytics with Distributed Raster Data Storage**

DEMOS

BurnScars

ClassName
- Enhanced Regrowth, High
- Enhanced Regrowth, Low
- Unburned
- Low Severity
- Moderate-low Severity
- Moderate-high Severity
- High Severity

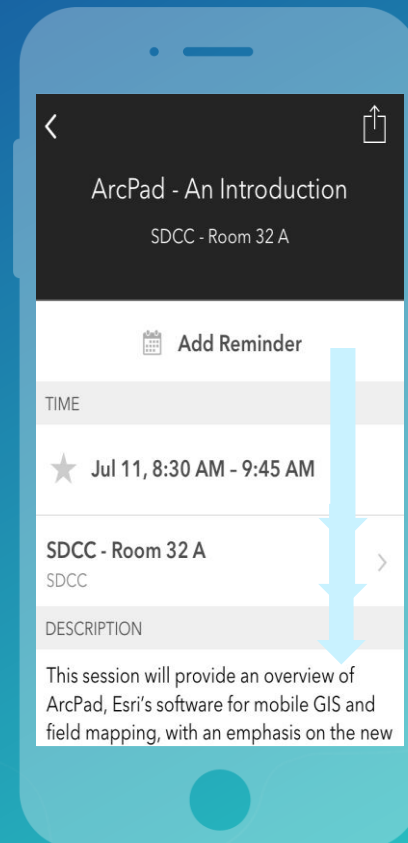# Please Take Our Survey on the **Esri Events App!**

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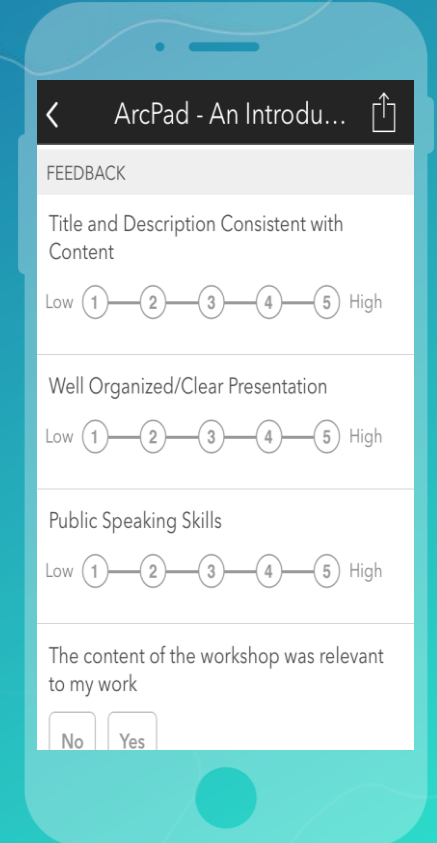**Select the session you attended**

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esri events

and Public Safety Summit
July 8-11, 2017
San Diego, CA

2017 Esri
Business Summit
July 9-11, 2017
San Diego, CA

Esri
User Conference
July 10-14, 2017
San Diego, CA

ALL EVENTS

☰   Schedule   🔍

JULY   SUN   MON   **TUE**   WED   THU
         9   10   **11**   12   13

8:30 AM - 9:45 AM
☆ **ArcGIS Pro: Mapping and Visualization**
SDCC - Ballroom 06 F

8:30 AM - 9:45 AM
☆ **ArcPad - An Introduction**
SDCC - Room 32 A

8:30 AM - 9:45 AM
☆ **Building Your Indoor GIS: CAD and BIM Import**
SDCC - Room 16 B

Filter On

‹   ⬆

ArcPad - An Introduction

SDCC - Room 32 A

📅   Add Reminder

TIME

☆   Jul 11, 8:30 AM - 9:45 AM

SDCC - Room 32 A   ›
SDCC

DESCRIPTION

This session will provide an overview of ArcPad, Esri's software for mobile GIS and field mapping, with an emphasis on the new

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‹   ArcPad - An Introdu...   ⬆

FEEDBACK

Title and Description Consistent with Content

Low ①—②—③—④—⑤ High

Well Organized/Clear Presentation

Low ①—②—③—④—⑤ High

Public Speaking Skills

Low ①—②—③—④—⑤ High

The content of the workshop was relevant to my work

No   Yes